

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference B 14328.3SL | FOR FURTHER ACTION | | See Form PCT/IPEA/416 |
| International application No. PCT/FR2004/050646 | International filing date (day/month/year) 03.12.2004 | Priority date (day/month/year) 05.12.2003 | |
| International Patent Classification (IPC) or national classification and IPC G01N27/12, G01N29/02, G01N33/00, C08L83/16 | | | |
| Applicant COMMISSARIAT A L'ENERGIE ATOMIQUE | | | |

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| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> |
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| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/FR2004/050646

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:

pages 1-25 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

the claims:

nos. 1-19 as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* _____ received by this Authority on _____

nos.* _____ received by this Authority on _____

the drawings:

sheets 1/3-3/3 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____

the claims, nos. _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____

any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____

the claims, nos. _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____

any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/FR2004/050646Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-19 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-19 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-19 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1: Sensors and Actuators B, Vol. 65, 2000, pages 5-9; R. A. McGuill et al.: "The design of functionalized silicone polymers for chemical sensor detection of nitroaromatic compounds".

D2: Sensors and Actuators B, Vol. 62, 2000, pages 233-237; M. Ben Ali: "Sensitive cyclodextrine-polysiloxane gel membrane on EIS structure and ISFET for heavy metal ion detection".

D3: WO-A-9822795

D4: DE-C-19708529

D5: WO-A-0208234

2. The invention relates to the use of polymers having a repetitive siloxane unit as a sensitive material in a sensor for detecting nitrated compounds.

Such a use is known from Sensors and Actuators B, Vol. 65, 2000, pages 5 to 9; R. A. McGuill et al.: "The design of functionalized silicone polymers for chemical sensor detection of nitroaromatic compounds" (see abstract and figures 2, 3a and 3b).

The problem to be solved is that of improving the sensitivity of such polymers to nitrated compounds.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/FR2004/050646Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

This problem is solved by a polymer including a repetitive polysiloxane unit, as described in claim 1. In particular, said unit does not include a phenyl group or a hexafluoroisopropanol group. In McGuill et al. the only two polymers (SXCN and OV202), which have the same structure as that of the invention, are poor candidates for making a nitrated compound sensor (see figure 3b and the paragraph "Summary and conclusions", pages 8, 9).

This solution is neither described nor suggested in any document and cannot be considered obvious to a person skilled in the art. Consequently, the subject matter of claim 1 meets the PCT requirements of novelty and inventive step.

3. Claims 2 to 19

Claims 2 to 19 are dependent on claim 1 and thus also comply, as such, with the PCT requirements of novelty and inventive step.